UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,226	06/02/2005	Shin'ya Katayama	02796/0202941-US0	2667

7278 7590 01/11/2008

DARBY & DARBY P.C.
P.O. BOX 770
Church Street Station
New York, NY 10008-0770

EXAMINER	
KASHNIKOW, ERIK	
ART UNIT	PAPER NUMBER
4174	

MAIL DATE	DELIVERY MODE
01/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,226	KATAYAMA ET AL.	
	Examiner	Art Unit	
	ERIK KASHNIKOW	4174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6,7 and 11-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6,7 and 11-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/02/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7, 26, 27 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Tatsuhiko et al. (JP 09-058650).

3. In regards to claims 1, 26 and 27 Tatsuhiko et al. teach a paper carton suitable for being filled with liquid contents (Paragraph 0001). Tatsuhiko et al. teach that the carton be comprised of a resin layer and a paper layer (Paragraph 0006). Tatsuhiko et al. teach a resin layer that can be an ethylene-vinyl alcohol copolymer (paragraph 0008). Tatsuhiko et al. teach polyethylene imine's can be used to coat the paper to promote adhesion (paragraph 0012), and further teach using DIKKU dry AC108 from Dainippin Ink & Chemicals (paragraph 0022) which examiner interprets as having a formula that is the same as formula I in applicants claims. Tatsuhiko et al. also teach that adhesives can be used between resin layers and between resin and paper layers (paragraph 0015). Tatsuhiko et al. teach that the resin layers can be formed by coextrusion (paragraph 0014).

4. In regards to claim 2 Tatsuhiko et al. teach that the resin layer may be single or multilayer (paragraph 0009). The extra layers in a multilayer embodiment of the

invention would place an extra layer on the opposite side of the barrier layer than the paper layer. As mentioned above Tatsuhiko et al. do teach the use of adhesives between resin layers.

5. In regards to claims 7 Tatsuhiko et al. teach the adhesive layer can comprise compounds such as ethylene methacrylic acid and a maleic anhydride polypropylene copolymer (paragraph 0015).

6. In regards to claim 32 Tatsuhiko et al. teach that ethylene can be used as the polyolefin (paragraph 0015).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 6, 17, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Akao et al. (US 5,358,785).

9. As stated above Tatsuhiko et al. teach a paper carton suitable for being filled with liquid, as well as adhesive layers made from carboxylic acid and polyolefin resins (paragraph 0015). However they are silent regarding the polymers being graft polymers.

10. Akao et al. teach multilayer laminated films, formed using extrusion processes, which are used in packaging (Akao column 1 line 6).

11. In regards to claim 6 Akao et al. teach that polyolefin resins graft modified by carboxylic acids are known in the art as adhesive resins used to join other resins (Akao column 29 line 23-29).

12. In regards to claim 30 Tatsuhiko et al. teach that the adhesive can be a maleic anhydride (Tatsuhiko paragraph 0015).

13. In regards to claim 31 Tatsuhiko et al. teach that ethylene can be used as the polyolefin (Tatsuhiko paragraph 0015).

14. In regards to claim 17, as stated above Tatsuhiko et al. teach that the polyethylene imine can be used to coat the base to promote adhesion to the subsequent adhesive layer (Tatsuhiko Paragraph 0012). Akao et al. teach the polyolefin modified carboxylic acid adhesive layers, but is silent regarding the melt flow rate. However since all the limitations of the adhesive are taught, the melt flow rate would be within the same range of applicants because it is an inherent property.

15. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Tatsuhiko et al. with the invention of Akao et al. because the invention of Akao et al. has great tear strength and puncture strength (Akao column 1 lines 20-22).

16. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Miyake et al. (US 5,942,320).

17. As stated above Tatsuhiko et al. teach a paper carton suitable for being filled with liquid, as well as using ethylene-vinyl alcohol copolymer as the barrier layer. However they are silent regarding the saponification of the ethylene vinyl copolymer.

18. Miyake et al. teach a multilayer barrier composite film with gas barrier properties (column 1 lines 5-6).

19. In regards to claim 11 Miyake et al. teach that ethylene vinyl alcohol copolymers with a ethylene content of 5-50% mol and a saponification of not less than 99.5% are the preferred barrier resins for their invention (column 11 line 58 - column 12 line 24).

20. In regards to claim 12 Miyake et al. teach all limitations of the composition of the ethylene vinyl alcohol copolymer and therefore the melt flow rate would be inherent.

21. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Tatsuhiko et al. with the invention of Miyake et al. because the invention of Miyake et al. offers prominent gas barrier properties against water vapor, oxygen and aromatic components (Miyake column 1 lines 6-8).

22. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Akao et al. (US 5,358,785) in further view of Miyake et al. (US 5,942,320).

23. As stated above Tatsuhiko et al. teach a paper container suitable for holding liquids, but are silent regarding the thickness of the individual layers.

24. As stated above Akao et al. taught the adhesive layers. Akao et al. further teach that the adhesive layers have a thickness of 1-50 μm (column 16 lines 63-64). However

Akao et al. are silent regarding the thickness for a barrier layer. As stated above one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Tatsuhiko et al. with the invention of Akao et al. because the invention of Akao et al. has great tear strength and puncture strength (Akao column 1 lines 20-22).

25. Miyake et al. teach the barrier layer described by applicants. They further teach that the barrier layer have a thickness that is between 0.05-15 μm (column 14 lines 30-33).

26. One of ordinary skill in the art at the time of the invention would be motivated to modify the inventions of Tatsuhiko et al. and Akao et al. with the invention of Miyake et al. because the invention of Miyake et al. offers prominent gas barrier properties against water vapor, oxygen and aromatic components (Miyake column 1 lines 6-8).

27. Claims 14-16 and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Frisk et al. (WO 00/44632 with US 6,974,612 relied upon as the translation).

28. As stated above Tatsuhiko et al. teach a paper container for holding liquids.

29. Tatsuhiko et al. teach an outer layer but are silent as to the thickness of the individual layers and use of applicant's materials.

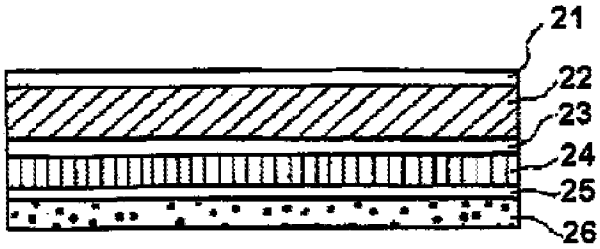
30. Frisk et al. teach a package material for paper containers (column 1 lines 6 and 7).

31. In regard to claim 14 Frisk et al. teach an innermost thermoplastic layer which has a thickness of 20-50 μm (Frisk column 5 line 9).

32. In regards to claim 15 Frisk et al. teach that the innermost layer comprises a linear low density polyethylene (Frisk column 5 lines 26-27).

33. In regards to claim 16 Frisk et al. teach a melt flow index of 5-20 (Frisk column 5 line 18).

34. In regards to claim 19 and 20 Frisk et al. teach an outermost layer, which is on the opposite side of the paper base layer than the coextrusion laminated surface, which has a thickness of 10-25 μm and a melt flow index of 5-20 (Frisk column 4 line 33-41 and figure 1).



35. In regards to claim 21 Frisk et al. do not teach any layer that is closer to the inner part of a container than the innermost layer described above. Frisk et al. do teach that the containers are to be filled with liquid contents (Frisk column 1 line 20-26). Therefore it is obvious to one of ordinary skill in the art at the time of the invention that the innermost layer is a content contacting layer.

36. In regards to claim 25 Frisk et al. teach that the innermost layer comprises a linear low density polyethylene (Frisk column 5 lines 26-27).

37. In regards to claims 22, 23 and 24 Tatsuhiko et al. teach coextrusion, single extrusion and sandwich lamination as methods for forming the film of their invention (Tatsuhiko paragraph 0014). While they do not specify it for any of the specific layers, it would be well within the ability of one of ordinary skill in the art at the time of the invention to apply these methods to the innermost layer.

38. In regards to claim 27 Frisk et al. teach the container can contain many various types of drinks but specify that the preferred embodiment of the invention is that the container contains a liquid food (Frisk column 13 line 3 - column 14 line 2). It is obvious to one of ordinary skill in the art at the time of the invention that a soft drink is a liquid food product.

39. Claims 18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuhiko et al. (JP 09-058650) in view of Ito et al. (US 4,623,587).

40. As stated above Tatsuhiko et al. teach a paper container for holding liquids. However they are silent regarding the die temperature when coextruding their product.

41. Ito et al. teach a multilayer film or sheet, with high adhesive bonding strength between layers (column 1 lines 7-9), which can be made into a container (column 6 line 11-15).

42. Ito et al. also teach that the film is formed by a coextrusion method in which the temperature at the die is held at 270^{o}C (example 1 column 9 lines 10-13).

43. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Tatsuhiko et al. with that of Ito et al. because the invention of Ito et al. offers high adhesive bonding strength between the layers (column 1 lines 7-9).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is

(571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gwendolyn Blackwell/
Primary Examiner, Art Unit 1794

Erik Kashnikow
Examiner
Art Unit 4174